

development of the mixing rotor developed into a plane about its longitudinal axis and extends from one longitudinal end of the mixing rotor toward the longitudinal middle side thereof by or beyond the longitudinal middle thereof, and a second longer blade which is substantially nonlinear in the development and extends from the other longitudinal end of the mixing rotor toward the longitudinal middle side thereof beyond the longitudinal middle thereof and whose helix angle gradually increases toward the other longitudinal end.

2. (Amended) A mixing rotor according to claim 1, wherein the helix angle of the linear blade to the longitudinal axis of the mixing rotor is 15 to 35°.

3. (Amended) A mixing rotor according to claim 1, wherein the end of the first longer blade at the longitudinal middle side of the mixing rotor is located at a position spaced apart from the second longer blade by 124° or larger in the circumferential direction of the mixing rotor.

4. (Amended) A mixing rotor for use in a batch mixer including a mixing chamber, the mixing rotor comprising a plurality of mixing blades, each mixing blade having a tip for defining a tip clearance against an inner surface of the mixing chamber where the mixing rotor is to be rotatably placed to impart shearing forces to a material to be mixed in the tip clearance, wherein the plurality of mixing blades include a pair of longer blades twisted in such a direction as to cause the material to flow toward a longitudinal middle side of the mixing rotor, and the pair of longer blades include a first longer blade which is linear in a development of the mixing rotor developed into a plane about its longitudinal axis and extends from one longitudinal end of the mixing rotor toward the longitudinal middle side thereof, and a second longer blade which is substantially nonlinear in the development and extends from the other longitudinal end of the mixing rotor toward the longitudinal middle

side thereof and whose helix angle gradually increases toward the other longitudinal end, wherein the mixing blades further include a first shorter blade twisted in such a direction as to cause the material to flow toward the longitudinal middle side of the mixing rotor, and the first shorter blade is linear and arranged behind the first longer blade with respect to a rotational direction of the mixing rotor and extends from the one longitudinal end of the mixing rotor toward the longitudinal middle side thereof.

5. (Amended) A mixing rotor according to claim 4, wherein the end of the first longer blade at the longitudinal middle side of the mixing rotor is located at a position spaced apart from the second longer blade by  $120^{\circ}$  or larger in the circumferential direction of the mixing rotor.

6. (Amended) A mixing rotor according to claim 4, wherein the end of the second longer blade at the longitudinal middle side of the mixing rotor is located substantially in the middle between the end of the first shorter blade at the same side and the first longer blade in the circumferential direction of the mixing rotor.

8. (Amended) A mixing rotor according to claim 7, wherein the end of the second longer blade at the longitudinal middle side of the mixing rotor is located substantially in the middle between the end of the first shorter blade at the same side and the first longer blade in the circumferential direction of the mixing rotor.

9. (Amended) A mixing rotor according to claim 7, wherein the end of the first longer blade at the longitudinal middle side of the mixing rotor is located at a position spaced apart from the second longer blade by  $120^{\circ}$  or larger in the circumferential direction of the mixing rotor.

10. (Amended) A mixing rotor according to claim 9, wherein the end of the second longer blade at the longitudinal middle side of the mixing rotor is located substantially in the middle between the end of the first shorter blade at the same side and the first longer blade in the circumferential direction of the mixing rotor.

11. (Amended) A batch mixer comprising:

a chamber including a mixing chamber; and

a mixing rotor rotatably placed in the mixing chamber, and including a plurality of mixing blades, each mixing blade having a tip for defining a tip clearance against an inner surface of the mixing chamber to impart shearing forces to a material to be mixed in the tip clearance, wherein the plurality of mixing blades include a pair of longer blades twisted in such a direction as to cause the material to flow toward a longitudinal middle side of the mixing rotor, and the pair of longer blades include a first longer blade which is linear in a development of the mixing rotor developed into a plane about its longitudinal axis and extends from one longitudinal end of the mixing rotor toward the longitudinal middle side thereof by or beyond the longitudinal middle thereof, and a second longer blade which is substantially nonlinear in the development and extends from the other longitudinal end of the mixing rotor toward the longitudinal middle side thereof beyond the longitudinal middle thereof and whose helix angle gradually increases toward the other longitudinal end.

12. (Amended) A batch mixer according to claim 11, wherein the helix angle of the linear blade to the longitudinal axis of the mixing rotor is 15 to 35°.

13. (Amended) A batch mixer according to claim 11, wherein the end of the first longer blade at the longitudinal middle side of the mixing rotor is located at a position spaced

apart from the second longer blade by 120° or larger in the circumferential direction of the mixing rotor.

14. (Amended) A batch mixer comprising:

a chamber including a mixing chamber; and

a mixing rotor rotatably placed in the mixing chamber, and including a plurality of mixing blades, each mixing blade having a tip for defining a tip clearance against an inner surface of the mixing chamber where the mixing rotor is to be rotatably placed to impart shearing forces to a material to be mixed in the tip clearance, wherein the plurality of mixing blades include a pair of longer blades twisted in such a direction as to cause the material to flow toward a longitudinal middle side of the mixing rotor, and the pair of longer blades include a first longer blade which is linear in a development of the mixing rotor developed into a plane about its longitudinal axis and extends from one longitudinal end of the mixing rotor toward the longitudinal middle side thereof, and a second longer blade which is substantially nonlinear in the development and extends from the other longitudinal end of the mixing rotor toward the longitudinal middle side thereof and whose helix angle gradually increases toward the other longitudinal end, wherein the mixing blades further include a first shorter blade twisted in such a direction as to cause the material to flow toward the longitudinal middle side of the mixing rotor, and the first shorter blade is linear and arranged behind the first longer blade with respect to a rotational direction of the mixing rotor and extends from the one longitudinal end of the mixing rotor toward the longitudinal middle side thereof.

15. (Amended) A batch mixer according to claim 14, wherein the end of the first longer blade at the longitudinal middle side of the mixing rotor is located at a position spaced

apart from the second longer blade by  $120^{\circ}$  or larger in the circumferential direction of the mixing rotor.

16. (Amended) A batch mixer according to claim 14, wherein the end of the second longer blade at the longitudinal middle side of the mixing rotor is located substantially in the middle between the end of the first shorter blade at the same side and the first longer blade in the circumferential direction of the mixing rotor.

18. (Amended) A batch mixer according to claim 17, wherein the end of the second longer blade at the longitudinal middle side of the mixing rotor is located substantially in the middle between the end of the first shorter blade at the same side and the first longer blade in the circumferential direction of the mixing rotor.

19. (Amended) A batch mixer according to claim 17, wherein the end of the first longer blade at the longitudinal middle side of the mixing rotor is located at a position spaced apart from the second longer blade by  $120^{\circ}$  or larger in the circumferential direction of the mixing rotor.

20. (Amended) A batch mixer according to claim 19, wherein the end of the second longer blade at the longitudinal middle side of the mixing rotor is located substantially in the middle between the end of the first shorter blade at the same side and the first longer blade in the circumferential direction of the mixing rotor.

#### REMARKS

Favorable reconsideration of the present application is respectfully requested.

Claims 1-20 remain active in the application. Claims 4 and 14 have been rewritten in independent form. The remaining claims have been amended in light of the rejection under